I claim:

1. A valve seal for a rotary valve assembly for use in internal combustion engines of the piston and cylinder type having high compression and long stroke, the rotary valve assembly positioned within a two piece cylinder head, said cylinder head defining a plurality of drum accommodating cavities for receipt of a plurality of rotary intake valves and rotary exhaust valves, said rotary intake valves and said rotary exhaust valves having a spherical section defined by two parallel planes of the sphere, said planes being disposed symmetrically about the center of said sphere, defining a spherical periphery and planar end walls, said rotary intake valves and said rotary exhaust valves mounted on the shaft means within said drum accommodating cavities in gas tight sealing contact with an inlet port and an exhaust port respectively, said rotary intake valve and said rotary exhaust valves having passageways therethrough for the introduction and interruption of fuel air mixture to the engine and the evacuation of exhaust gases from the engine respectively, said gas tight sealing contact of said rotary intake valve and said rotary exhaust valve of said intake port and said exhaust port, respectively, accomplished by a valve seal and a valve seat, the valve seal and valve seat comprising:

a valve body member, substantially circular in cross section, said valve body member having a curved annular upper surface conforming to said spherical periphery of said intake valve

or said exhaust valve, said valve body member having an aperture therethrough defined by an inner circular side wall coincidental with said aperture of said inlet port or said outlet port, said valve body member having an annular receiving groove formed on said curved upper surface about said aperture for receipt of a lubricating insert ring, said lubricating insert ring having a curved upper surface complimentary to said curved upper surface of said valve body member;

said valve body member further having an outer circumferential side wall having formed thereon a plurality of mounting ribs for the positioning about said outer circumferential side wall of said valve body member of a plurality of sealing rings for sealing contact of said valve body member to an outer wall of said valve seat;

said valve seat having an outer wall and an inner wall defining an annular groove for receipt of said valve body, said inner wall of said valve seat having an annular groove formed on an interior surface thereof for receipt of a pressure regulating ring, said pressure regulating ring contacting said valve body, said pressure regulating ring having a plurality of passageways therethrough for the passage of compressed gases during a compression stroke and power stroke of said engine so as to exert upward sealing pressure on said valve body.

2. A valve seal for a rotary valve assembly in accordance with Claim 1 wherein said pressure regulating ring passageways are

semi-circular in shape and formed on an outer periphery of said pressure regulating ring.

3. The valve seal for a rotary valve assembly in accordance with Claim 1 wherein the number of said passageways in said pressure regulating ring determine the desired upward pressure exerted on said valve body.

4. The valve seal for a rotary valve assembly in accordance with Claim 1 wherein said valve seat is frictionally positioned in a groove in said two piece cylinder head.

5. The valve seal for a rotary valve assembly in accordance with Claim 1 wherein said valve seat is threadedly secured in an annular groove within said two piece cylinder head.